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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,069	11/17/2003	Bernhard Stellwag	MOH-P010057	3307

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EXAMINER	
MONDT, JOHANNES P	

ART UNIT	PAPER NUMBER
3663	

MAIL DATE	DELIVERY MODE
12/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/715,069	STELLWAG ET AL.	
	Examiner	Art Unit	
	Johannes P. Mondt	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6,7,9 and 10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3, 4, 6, 7, 9 and 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Prosecution Application

1. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 11/06/2007 has been entered.

Response to Amendment

2. Amendment submitted 11/06/07 forms the basis for this office action. In said amendment, applicant cancelled claim 8, substantially amended claims 1, 3, 4, 6, 7 and 9 at least through substantial amendment of independent claim 1 , and added new claim 10. Comments on Remarks submitted with said amendment are included below under "Response to Arguments".

Claim Objections

3. ***Claims 6-7*** is objected to because of the following informalities: "component surfaces" (line 2) should be replaced by "surfaces of the components". Appropriate correction is required.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed

"condensate or feed water system", the claimed "primary system" and the claimed "components" and "surfaces of the components" must be shown or the features canceled from the claims (see claim 4 for "condensate or feed water system" and for "primary system", claims 1, 3 and 9 for "the components", and claims 1, 6-7 and 9 for the "surfaces of the components"). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. ***Claims 1, 3-4 and 6-9*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hettiarachchi (5,818,893) (made of record and cited previously), in view of Hirota et al (US 2001/0004962 A1).

On claim 1: Hettiarachchi teaches (title, abstract, cols. 1-4 and 8-11) a method for protecting components of a primary system (col. 8, l. 24-29) of a boiling water reactor (col. 1, l. 10-32) having a pressure vessel 10 and feed water line 12 (col. 8, l. 24-29) opening out into the pressure vessel (Figure 1), the method comprising:

metering (i.e., "to supply in a measured or regulated amount", see Merriam-Webster's Collegiate Dictionary, tenth Edition, p. 731) an alcohol selected from the group consisting of methanol, ethanol and propanol (namely: ethanol: see col. 9, l. 55-67) into the boiling water reactor to an alcohol concentration (that has been determined to be desirous and that indeed is within the claimed range from 0.1 to less than 10 μmol/kg as explained below) in a downcomer 16 (col. 8, l. 55-67), the down comer extending downward at an opening of the feed water line (see Figure 1), with surfaces of the components covered only by a native oxide layer (core shroud 18 is of stainless steel (col. 7, l. 55-67) while the conditions for native oxide layer only as provided by definition of native oxide layer given by applicants (specification, pages 6-7) are met, i.e., the corrosion potential is less than the critical potential of –230 mV (col. 3, l. 10-21 and col. 4, l. 55-67);

continuously (in the test over a period of about 30 minutes, and necessarily "continuously" because the ethanol is added as a component in a liquid: see col. 9, l. 55-67 and col. 10, l. 1-16; in operational use the concentration of the solution is clearly maintained (see) feeding the alcohol into a primary coolant ("high-temperature water"; col. 9, l. 9-23). Furthermore, noting that the addition of Pd during only 30 minutes is only a test showing the feasibility of depositing palladium on Type304, in applications of the invention to actual use in BWRs the solution is evidently taught to be maintained at a level to ensure the Pd concentration to be between 1 ppb and 1,000 ppb (=parts per billion) (col. 11, l. 23-25), while the ratio of Pd atoms to ethanol molecules follows from the cited content in milligrams of Pd-acetylacetonate (Pd $(C_5H_7O_2)_2$) (molecular weight:= 304.4 amu; see www.knovel.com for physical constants) and the volume content of ethanol (+C_2H_5OH) (molecular weight = 46) that are mixed together in the liquid (col. 9, l. 55-67), namely 50 ml. Given the specific weight of ethanol (0.79 times that of water) said ratio is thus seen to be = $(52.6 \times 10^{-3}/304.4)$: $(39.5 \times 10^{-3}/46) = 0.02$ (within one percent accuracy), and hence the aforementioned concentration of Pd implies a concentration in terms of parts per billion of ethanol equal to between 5 ppb and 5,000 ppb of ethanol. In light of the molar weight of ethanol (=46) and the molar weight of the solvent (water: 18) (col. 9, l. 60) i.e, between $5x10^{-9}$ and $5x10^{-6}$) times the number of moles of water in 1 kg, the latter is 1,000/18= 55.6 moles, hence between $5 \times 10^{-9} \times 55.6$ and $5x10^{-6} \times 55.6$ moles / kg, or between 0.278 μmoles/kg and 278 μmoles /kg (within a relative error of one percent). The range in the prior art is thus seen to significantly overlap the range in the invention as claimed, having in common the

intersection 0.278 –10 μmoles/kg. The aforementioned substantial overlap of the ranges as claimed in the prior art and in the invention as claimed at least establishes prima facie obviousness: A *prima facie* case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art or when the ranges of a claimed composition do not overlap but are close enough such that one skilled in the art would have expected them to have the same properties. In re Peterson, 65 USPQ2d 1379 (CA FC 2003).

Although Hettiarachchi does not necessarily teach the steps of measuring said alcohol concentration in the boiling water reactor and metering in additional alcohol based on the measuring in order to maintain the alcohol concentration (in the range it is expected to have initially), it would have been obvious to include said steps in view of conventional procedures in place to maintain a desired liquid concentration in the general field of the treatment of liquid desired to have a certain concentration, such as water treatment, for instance, as witnessed by Hirota et al, who, in a patent on a water treatment device, - hence in this regard analogous to the problem Hettiarachchi must keep in mind, - namely: the maintenance of a desired concentration such as the regulation of a desired pH, teach the maintenance of a certain desirable pH concentration by:

"measuring the pH of water, an adjusting solution tank to put in a pH adjusting solution for adjusting the pH of water, and a supplying path for supplying to the water treating path the pH adjusting solution poured into the adjusting solution tank, the control means supplying the pH adjusting solution to the water treating path from the adjusting solution tank on demand through the supplying"

See paragraph [0082].

Therefore, it is concluded that the newly added limitations to claim 1 would have been obvious because the technique for improving a particular class of devices (boiling water reactor with desired concentration of alcohol in coolant) was part of the ordinary capabilities of a person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations (such as the maintenance of a particular desired concentration of solvent in water tank for pools).

On claim 3: the method by Hettiarachchi comprises protecting the components (such as 18 as identified overleaf) against stress corrosion cracking (see abstract and col. 1, l. 44-56, and col. 9, l. 25-40).

On claim 4: the method comprises feeding the alcohol into a condensate or feed water system and carrying the alcohol into the primary system with the feed water (col. 9, l. 55-67 and col. 10, l. 1-16).

On claim 6: the method comprises doping the component surfaces with a precious metal, namely: Pd (palladium) (col. 7, l. 10-35, col. 10, l. 20-col. 11, l. 25).

On claim 7: platinum (Pt) is one of the metals recommended in the method by Hettiarachchi (col. 5, l. 26-38 and col. 12, claim 7) while the surfaces of the components are doped with any of said one of the metals (col. 7, l. 55-67). Furthermore, considering that the actual purpose of metal additions pertains to achieving concentrations in terms of particle number for lowering the (electrochemical corrosion potential ("ECP") (col. 3, l. 10-50) it would have been obvious to adapt the 52.6 mg used for palladium

acetylacetone to reflect the different molecular weight of 393.29 so as to keep the parts per billion unaltered; which leads to the same range for ethanol concentration as before. Hence the method with substitution of Pt for Pd still meets all claim limitations with the proviso of overlapping concentration ranges.

On claim 9: the surfaces of the components are covered by a native oxide layer, as witnessed by the value of the electrochemical corrosion potential below the critical value of –230 mV for stainless steel (col. 3, l. 10-21 and col. 4, l. 55-67).

4. ***Claim 10*** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hettiarachchi and Hirota et al as applied to claim 1 above, and further in view of Lee et al (4,559,109). *As detailed above, claim 1 is unpatentable over Hettiarachchi in view of Hirota et al. Neither Hettiarachchi nor Hirota et al necessarily teach* the further limitation defined by claim 10. *However, it would have been obvious to include said further limitation in view of Lee et al,* who, in a process to extract ethanol for recycling from an ethanol-water mixture in a vapor phase (title and abstract), hence in this regard analogous to Hettiarachchi, teach the extraction of almost pure ethanol through what is evidently a conventional extractive distillation process (loc.cit.). *Motivation* to include the teaching by Lee et al derives immediately from the relative expense associated with ethanol in comparison with water, which is known to those of quite ordinary skill in the art. *Combination* merely requires the same process to a similar ethanol-vapor mixture.

Response to Arguments

Applicant's arguments filed 11/06/07 have been fully considered but they are not persuasive. In particular, on "metering", metering is, - see Merriam-Webster's

Collegiate Dictionary, tenth Edition, "to supply in a measured or regulated amount", and therefore Hettiarachchi meets the limitation (see col. 9, l. 55-67, previously cited). Please note that the step of supplying the selected alcohol in a measured or regulated manner is carried out such that said alcohol is indeed supplied into the boiling water reactor. Furthermore, although Hettiarachchi does not necessarily teach the steps of measuring said alcohol concentration in the boiling water reactor and metering in additional alcohol based on the measuring in order to maintain the alcohol concentration (in the range it is expected to have initially), it would have been obvious to include said steps in view of conventional procedures in place to maintain a desired liquid concentration in the general field of the treatment of liquid desired to have a certain concentration, such as water treatment, for instance, as witnessed by Hirota et al, who, in a patent on a water treatment device, - hence in this regard analogous to the problem Hettiarachchi must keep in mind, - namely: the maintenance of a desired concentration such as the regulation of a desired pH, teach the maintenance of a certain desirable pH concentration by:

"[M]easuring the pH of water, an adjusting solution tank to put in a pH adjusting solution for adjusting the pH of water, and a supplying path for supplying to the water treating path the pH adjusting solution poured into the adjusting solution tank, the control means supplying the pH adjusting solution to the water treating path from the adjusting solution tank on demand through the supplying".

See paragraph [0082]. Therefore, it is concluded that the newly added limitations to claim 1 would have been obvious because the technique for improving a particular class of devices (boiling water reactor with desired concentration of alcohol in coolant) was

part of the ordinary capabilities of a person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations (such as the maintenance of a particular desired concentration of solvent in water tank for pools).

Finally, claim 10 has been examined at the earliest possible time.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. ***Claim 1*** is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of co-pending Application No. 11/820,966 in view of Hirota et al (US 2001/0004962 A1). Specifically:

The pre-ambles are the same. The claimed "metering", i.e., supplying in regulated or measured amount" (Webster's Collegiate Dictionary, tenth Edition, page 731) is implied by the range that follows the limitation "metering" and hence is not in essence different

from "providing" as claimed in the co-pending Application. The ranges of the claimed alcohol concentration are the same. The limitations of measuring and metering in additional alcohol are obvious in view of Hirota et al, who, in a patent on a water treatment device, - hence in this regard analogous to the problem Hettiarachchi must keep in mind, - namely: the maintenance of a desired concentration such as the regulation of a desired pH, teach the maintenance of a certain desirable pH concentration by:

"[M]easuring the pH of water, an adjusting solution tank to put in a pH adjusting solution for adjusting the pH of water, and a supplying path for supplying to the water treating path the pH adjusting solution poured into the adjusting solution tank, the control means supplying the pH adjusting solution to the water treating path from the adjusting solution tank on demand through the supplying".

See paragraph [0082]. Therefore, it is concluded that the limitations on measuring and metering in additional alcohol would have been obvious because the technique for improving a particular class of devices (boiling water reactor with desired concentration of alcohol in coolant as in the co-pending application) was part of the ordinary capabilities of a person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations (such as the maintenance of a particular desired concentration of solvent in water tank for pools).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P. Mondt whose telephone number is 571-272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JPM
December 10, 2007

Primary Examiner:
Johannes Mondt (Art Unit: 3663).